

Application No.: 10/520,816

AMENDMENTS TO THE CLAIMS

1. (Currently amended) An electronic device comprising:
a low dielectric constant film having a hole and a trench formed in at least an upper portion of the low dielectric constant film to be connected with the hole;
a nitrogen-non-containing insulating film formed under the low dielectric constant film;
and
a nitrogen-containing insulating film formed under the nitrogen-non-containing insulating film,
wherein a bottom of the trench is located in the middle portion of the vertical direction of the low dielectric constant film.

2. (Previously presented) The electronic device of Claim 1, wherein
the hole passes through the nitrogen-non-containing insulating film and the nitrogen-containing insulating film;
the electronic device further includes a lower-level interconnect which is located under the hole and connected with the hole; and
the upper surface of the lower-level interconnect, except for a region in which the lower-level interconnect is connected with the hole, is covered with the nitrogen-containing insulating film.

3. (Original) The electronic device of Claim 1, wherein the lower surface of the low dielectric constant film is in contact with the upper surface of the nitrogen-non-containing insulating film.

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4. (Original) The electronic device of Claim 1, wherein the low dielectric constant film is a carbon-containing silicon oxide film or a porous film.

5. (Original) The electronic device of Claim 4, wherein the carbon-containing silicon oxide film is a SiOC film.

6. (Currently amended) An electronic device comprising:
a low dielectric constant film having a hole;
a nitrogen-non-containing insulating film formed over the low dielectric constant film;
and
a nitrogen-containing insulating film formed over the nitrogen-non-containing insulating film,
wherein a trench, which is connected with the hole, is formed in the nitrogen-containing insulating film, the nitrogen-non-containing insulating film and at least an upper portion of the low dielectric constant film, and
a bottom of the trench is located in the middle portion of the vertical direction of the low dielectric constant film.

7. (Previously presented) The electronic device of Claim 6, wherein the nitrogen-containing insulating film is an anti-reflection film.

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8. (Original) The electronic device of Claim 6, wherein the upper surface of the low dielectric constant film is in contact with the lower surface of the nitrogen-non-containing insulating film.

9. (Original) The electronic device of Claim 6, wherein the low dielectric constant film is a carbon-containing silicon oxide film or a porous film.

10. (Original) The electronic device of Claim 9, wherein the carbon-containing silicon oxide film is a SiOC film.

11. (Currently amended) An electronic device comprising:
a low dielectric constant film having a hole;
a first nitrogen-non-containing insulating film formed under the low dielectric constant film; and
a second nitrogen-non-containing insulating film formed over the low dielectric constant film,
wherein a trench, which is connected with the hole, is formed in the second nitrogen-non-containing insulating film and at least an upper portion of the low dielectric constant film, and
a bottom of the trench is located in the middle portion of the vertical direction of the low dielectric constant film.

12. (Original) The electronic device of Claim 11, wherein the lower surface of the low dielectric constant film is in contact with the upper surface of the first nitrogen-non-containing insulating film.

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13. (Original) The electronic device of Claim 11, wherein the upper surface of the low dielectric constant film is in contact with the lower surface of the second nitrogen-non-containing insulating film.

14. (Original) The electronic device of Claim 11, wherein the low dielectric constant film is a carbon-containing silicon oxide film or a porous film.

15. (Original) The electronic device of Claim 14, wherein the carbon-containing silicon oxide film is a SiOC film.

16. (Currently amended) An electronic device comprising:
a low dielectric constant film having a hole; and
a low density insulating film having a film density of 1.3 g/cm^3 or lower and formed over the low dielectric constant film,

wherein a trench, which is connected with the hole, is formed in the low density insulating film and at least an upper portion of the low dielectric constant film and is filled with an interconnect, and

~~an upper surface of the interconnect and an upper surface of the low density insulating film are on the same level~~ a bottom of the trench is located in the middle portion of the vertical direction of the low dielectric constant film.

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17. (Original) The electronic device of Claim 16, wherein the low density insulating film contains nitrogen.

18. (Original) The electronic device of Claim 16, further comprising a nitrogen-containing insulating film formed under the low dielectric constant film.

19. (Original) The electronic device of Claim 16, wherein the low dielectric constant film is a carbon-containing silicon oxide film or a porous film.

20. (Original) The electronic device of Claim 19, wherein the carbon-containing silicon oxide film is a SiOC film.

21-43. (Canceled)